

## Number Sense Exam 039, 9/4/2017

- (1)  $22.5\% =$  \_\_\_\_\_ (fraction)
- (2)  $36\% =$  \_\_\_\_\_ (proper fraction)
- (3)  $2007 \div 7 =$  \_\_\_\_\_ (mixed number)
- (4)  $46^2 =$  \_\_\_\_\_
- (5)  $65 \times .34 =$  \_\_\_\_\_
- (6)  $4 \div 1\frac{3}{5} =$  \_\_\_\_\_ (mixed number)
- (7)  $20.09 + 2.010 =$  \_\_\_\_\_ (decimal)
- (8)  $\frac{7}{9} \div \frac{14}{27} =$  \_\_\_\_\_
- (9)  $75 \times .84 =$  \_\_\_\_\_
- \*(10)  $21347 + 1118 + 2947 + 76 =$  \_\_\_\_\_
- (11)  $\text{LCM}(12, 20) \times \text{GCD}(12, 20) =$  \_\_\_\_\_
- (12)  $\text{MMVIII} \div \text{IX} =$  \_\_\_\_\_ (Arabic Numeral)
- (13)  $23 \times 34 + 23 \times 26 =$  \_\_\_\_\_
- (14)  $15 \times \frac{15}{17} =$  \_\_\_\_\_ (mixed number)
- (15)  $\text{DLV} \times \text{CXI} =$  \_\_\_\_\_ (Arabic Numeral)
- (16)  $\frac{5}{8} - \frac{5}{16} - \frac{5}{24} =$  \_\_\_\_\_
- (17) The sum of the positive integral divisors of 51 is \_\_\_\_\_
- (18) 280 plus 30% of 320 is \_\_\_\_\_
- (19)  $4\frac{1}{3}\%$  of 12 = \_\_\_\_\_ (decimal)
- \*(20)  $224488 \div 111 =$  \_\_\_\_\_
- (21) The multiplicative inverse of  $-\frac{2}{3}$  is \_\_\_\_\_
- (22)  $311_4 =$  \_\_\_\_\_  $_{10}$
- (23)  $\frac{11}{40} =$  \_\_\_\_\_ % (decimal)
- (24)  $(12 \times 21 + 79) \div 5$  has a remainder of \_\_\_\_\_
- (25) The set  $\{M, A, T, H\}$  has \_\_\_\_\_ subsets
- (26)  $121 \times 121 =$  \_\_\_\_\_
- (27)  $(112 + 17 \times 25) \div 8$  has a remainder of \_\_\_\_\_
- (28) If the area of a square is 72 sq. in., then the length of its diagonal is \_\_\_\_\_ in.
- (29)  $3367 \times 21 =$  \_\_\_\_\_
- \*(30)  $3367 \times 14443 =$  \_\_\_\_\_
- (31)  $(23 - 4 \times 5 + 6) \div 7$  has a remainder of \_\_\_\_\_
- (32)  $3904 \div 61 =$  \_\_\_\_\_
- (33) Truncate  $\sqrt{2}$  to the tenths place. \_\_\_\_\_
- (34) If  $f(x) = x^2 - 2x - 3$ , then  $f(3) =$  \_\_\_\_\_
- (35) If  $x^3 + 30 = 3$  then  $x =$  \_\_\_\_\_
- (36)  $1^2 + 5^2 + 6^2 + 11^2 =$  \_\_\_\_\_
- (37) The number of distinct elements in  $\{M, E, N, T, A, L\} \cap \{M, A, T, H\}$  is \_\_\_\_\_
- (38)  $1 + 1 + 2 + 3 + 5 + 8 + \dots + 34 + 55 =$  \_\_\_\_\_
- (39) How many positive integers less than 20 are relatively prime to 20? \_\_\_\_\_
- \*(40)  $2009 \times 2008 \div 289 =$  \_\_\_\_\_
- (41) The vertex of  $y = x^2 - 2x - 4$  is  $(h, k)$  and  $k =$  \_\_\_\_\_
- (42)  $2! \times 3! - 5! =$  \_\_\_\_\_
- (43) given  $1190 \div 34 = 35$ . Find  $1190 \div 4.25$ . \_\_\_\_\_
- (44)  $102 \times 112 =$  \_\_\_\_\_
- (45) Find the slope of a line containing the points  $(4, -1)$  and  $(6, 5)$ . \_\_\_\_\_

- (46)  $28 \times 45 - 15 \times 34 =$  \_\_\_\_\_
- (47) The next term of 2, 3, 4, 6, 8, ... is \_\_\_\_\_
- (48)  $\frac{8}{11} - \frac{31}{45} =$  \_\_\_\_\_
- (49) If  $x + y = 4$  and  $xy = 5$ , then  $x^3 + y^3 =$  \_\_\_\_\_
- \*(50)  $654 \log 987 =$  \_\_\_\_\_
- (51) The vertex of  $y = 2x^2 - 8x - 10$  is  $(h, k)$   
and  $h =$  \_\_\_\_\_
- (52)  $42^2 + (40^2 - 2^2) =$  \_\_\_\_\_
- (53)  ${}_5P_3 \div {}_5C_2 =$  \_\_\_\_\_
- (54)  $\frac{2}{3} + \frac{2}{15} + \frac{2}{35} =$  \_\_\_\_\_
- (55) A regular polygon has an interior angle of  $144^\circ$ .  
How many sides does the polygon have? \_\_\_\_\_
- (56) The first 3 digits of the decimal of  $\frac{42}{99}$  is 0. \_\_\_\_\_
- (57)  $\sqrt{15129} =$  \_\_\_\_\_
- (58) Two numbers are in the ratio 3:11. If their sum is 84, find the smaller number. \_\_\_\_\_
- (59)  $(2i)^6 =$  \_\_\_\_\_
- \*(60)  $67 \times 71 \times 73 =$  \_\_\_\_\_
- (61) The volume of a right circular cylinder 11 cm high with a diameter of 22 cm is \_\_\_\_\_  $\pi$  cm<sup>2</sup>
- (62) If  $B \in QI$  and  $\sin B = \frac{3}{5}$ , then  $\cot B =$  \_\_\_\_\_
- (63) How many ways can Romeo and Juliet sit in a row of four chairs? \_\_\_\_\_
- (64)  $1^2 - 2^2 + 3^2 - 4^2 + 5^2 - 6^2 + 7^2 =$  \_\_\_\_\_
- (65)  $32^2 - 30^2 + 28^2 - 26^2 =$  \_\_\_\_\_
- (66) The sum of the reciprocals of all of the positive divisors of 6 is \_\_\_\_\_
- (67)  $3 + 7 + 11 + 15 + \dots + 79 =$  \_\_\_\_\_
- (68) Three coins are tossed. Find the odds of getting 3 tails. \_\_\_\_\_
- (69)  $1^2 - 2^2 + 3^2 - 4^2 =$  \_\_\_\_\_
- \*(70)  $645731 \div 1111 =$  \_\_\_\_\_
- (71)  $\sum_1^4 x^2 - 1 =$  \_\_\_\_\_
- (72) If  $f(x) = 2 + \frac{3}{4-x}$ , then  $f^{-1}(5) =$  \_\_\_\_\_
- (73) If  $f(x) = 4x^3 - 3x^2 + x$ , then  $f'(-1) =$  \_\_\_\_\_
- (74)  $7 \times 11 \times 13 \times 17 =$  \_\_\_\_\_
- (75) If  $f(3) = 7$ , then  $f^{-1}(7) =$  \_\_\_\_\_
- (76) If  $f(x) = 3x - 2$  then  $f(f(3)) =$  \_\_\_\_\_
- (77) A number is randomly drawn from the set  $\{1, 2, 3, 4, 5\}$ . What is the probability that the number drawn is a factor of 6? \_\_\_\_\_ %
- (78) The distance between the point  $(2, 1)$  and the line  $3x + 4y = 5$  is \_\_\_\_\_
- (79)  $f(x) = x^4 + 4x^3 + 6x^2 + 4x + 1$ . Find  $f'(-1) =$  \_\_\_\_\_
- \*(80) The surface area of a sphere with a diameter of 24 inches is \_\_\_\_\_ sq. inches.